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ABSTRACT

Drawing from the literature on the financing of community colleges, this paper discusses problems associated with state community college funding and examines the relationships that arise between the state, local community college districts, and students when each is an important source of revenue to the community college. In the first section, issues related to intergovernmental fiscal policy, the development of systems of community college financing, and the currect status of state finance systems are reviewed. Next, problems in the funding of community colleges are highlighted, including the isolation of community college funding from the funding of other educational institutions in many states; lower levels of state support for community colleges compared to other postsecondary institutions; the inequity that arises when appropriations to colleges are derived from local property taxes; and the fact that tuitions can vary more widely among community college districts than median family incomes. The next section presents an empirical analysis of community college finance in Illinois for 1975-76, which concentrates on the question of the equity of basing the distribution of state aid to community colleges on the wealth of the local district. Finally, the policy issues of integrating state and federal support to community colleges, levels of student contributions to college costs, and appropriate levels of local support are discussed. (HB)

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PAPERS IN EDUCATION FINANCE

Paper No. 2

FINANCING COMMUNITY COLLEGES: AN EXAMINATION OF THE STATE AND LOCAL ROLES

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Presented at the
Postsecondary Education Finance Conference
Denver, Colorado
November 16-18, 1977

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Introduction

Community colleges, like other postsecondary education institutions, obtain revenues from a variety of sources, including governmental appropriations and student tuition. Unlike other postsecondary education institutions, however, community colleges in some states are supported in part by funds appropriated from local community college districts. One of the major differences in community colleges among the states is the proportion of revenue provided by local districts. In fiscal year 1975, the latest year for which aggregate institutional financial data have been published by the National Center for Educational Statistics, total current funds revenues (excluding those from the sales and services of auxiliary enterprises) were $4,111 million for all public two-year institutions. In that year, there were no local district revenues appropriated to community colleges in 15 states. Among the 35 states in which any local district appropriation was made to current revenues, the proportion of all such revenues provided by local districts varied from less than one percent to nearly 43 percent. In those states, local districts provided 26 percent of the aggregate current revenues of community colleges (Mertins and Brandt, 1977). Of equal interest is the fact that 92 percent of all 1976 community college full-time-equivalent (FTE) student enrollments, or 34 percent of all FTE enrollments in postsecondary education institutions, were in those 35 states (Eldridge, 1977. A part-time student has been counted as one-third of a full-time student).

In states where a local district contribution is required, the trend has been for the amount of such support to have increased over the past few years,

both in absolute dollars and as a proportion of all community college revenues. This has occurred in part because state appropriations have not risen as rapidly as the increase in institutional current operating expenditures and in part because states and institutions have been reluctant to raise tuition rates in light of the "open door" policy, which has been viewed as an integral part of the community college mission. The increased reliance on sources of revenues other than state aid has raised questions concerning the equity of current state finance mechanisms for community colleges.

The purpose of this paper is to discuss the problems associated with state finance systems and, in particular, to examine the relationships between the state, local community college districts, and students that arise when each is an important source of revenue to community colleges. The paper is divided into three sections. In the first section a review is made of issues related to intergovernmental fiscal policy, the development of systems of financing community colleges and the current status of state finance systems. Several important problems that arise in community college finance are examined in the second section. An empirical analysis of community college finance in Illinois is presented in the third section.

INTERGOVERNMENTAL FISCAL ISSUES AND COMMUNITY COLLEGE FINANCE

While the literature dealing with the development of a community college concept is large, only a small proportion of that literature is devoted to the financing of community colleges. A more extensive literature exists in the areas of elementary/secondary school finance and intergovernmental public finance. In order to appropriately discuss the state and local roles in the financing of community colleges, it is necessary to review the relevant portions of each of these sources.

The United States is a federation consisting of a central government, state governments and thousands of local governments, including community college districts. While it is possible, from a theoretical perspective, to assign the provision of social goods to optimally defined governmental units, designed to reflect the preferences of the residents of the region over which the relevant benefits are likely to extend, the historic development of those units has led to the need for intergovernmental fiscal adjustments. Such adjustments, involving the flow of aid from higher levels of government to lower level ones, can be justified on the basis of both factors that are beyond the control of governments and factors within their control but not controlled due to political considerations. The principal factors largely beyond the control of governments are regional differences in wealth or interjurisdictional spillovers of the costs and benefits associated with the provision of social goods. Factors within government control but not normally controlled include voter procedures on taxes and reliance on taxes that tend to have a lower income elasticity than the expenditures they finance (Hirsch, 1970, p. 114).

In addition to the promotion of interjurisdictional fiscal equity, intergovernmental aid may be justified when a higher level of government is interested

in increasing the expenditures, or equalizing the expenditures, of lower levels of government, particularly when "merit goods," such as education, are being produced (Musgrave and Musgrave, 1973, p. 612). Oates has noted that in the United States, as in most federal countries, equalization and the achievement of certain national minimum levels of basic services are regarded as essential elements in intergovernmental relations (1972, p. 87). In order to accomplish these and other objectives, higher levels of government provide grants of different types to lower levels of government. The primary distinction among grants is based on three features: whether the grant has a matching requirement or not, whether the grant is distributed for general purposes or is categorical in nature and whether the magnitude of the grant is related to or independent of the fiscal capacity of the receiving jurisdiction. The promotion of fiscal equity and appropriate expenditure levels normally requires that grants have a matching component, that they be categorical and that they be distributed in a manner that takes into consideration the differing fiscal capacities of governments (Musgrave and Musgrave, 1973, p. 614).

While the national government does provide funds in support of all levels of education, the primary support for education is generated by state governments as a result of federal Constitutional provisions and the development of education as a public function. The majority of intergovernmental grants provided in the financing of education are at the elementary/secondary school level. Originally, the funding of elementary/secondary education was considered to be a function of local jurisdictions. The states have become more involved in providing support out of a desire to avoid excessive differentials in both educational opportunities and the tax efforts needed to provide them among local school districts. State aid to promote these ends has taken various forms. Over 70 years ago Cubberley advocated the use of flat grants, equal payments

per task unit, as a way for states to provide aid to local school districts. His rationale for such a system was that the responsibility of the state was to provide a minimum program for all pupils on an equal basis since all pupils are equally important (1906, p. 17). While this approach has increased state involvement in supporting education, the equalization impact of flat grants tends to be modest unless the grant is of sufficient magnitude that the state also constrains the use of local district revenues (Benson, 1968, p. 160). An improved form of state support was provided through the foundation program plan developed by Strayer and Haig. They held that the primary objective of state aid was equalization, which was defined as the assurance by the state of equal educational facilities to every child with a uniform tax burden (1923, p. 162). Under such a system, the state was to establish a level of expenditure required to provide minimum educational opportunities while each district was to tax itself at the rate equal to the one that the most affluent district would need to apply in order to generate the necessary funds without any state revenue. All districts, with less wealth than the most affluent district would raise less revenue than was expected at that tax rate and the state would supplement local revenues to the extent necessary (Benson, 1968, p. 161). The foundation plan, later modified by Mort so that a "key" district rather than the richest district was used as a standard, has been criticized primarily since, in practice, the foundation expenditure level tends to be low, usually a statewide average figure, and since no equalization occurs above that level (Coons et al., 1970, p. 71).

Updegraff and King developed another approach to school finance based on an equalized state matching grant, commonly referred to as a percentage equalizing formula. Under this system the state pays a proportion of a school district's expenditures, with the proportion inversely related to the relative

wealth of the school district. This system, like the foundation plan, requires that the state select a key district and unless that district is the wealthiest one in the state, the percentage equalizing formula may provide equalization to some, but not all, districts (Coons et al., 1970, p. 172). In the purest form of a percentage equalizing formula, district power equalizing, all districts can theoretically be equalized, that is it can be guaranteed that the sum of state and local revenues received will be equal for districts taxing themselves at the same rate. Under this system the wealthiest districts would yield to the state any local revenues collected in excess of that guaranteed by the state at a particular tax rate. The implementation of a percentage equalizing formula, in any of its forms, is normally undertaken in conjunction with other state aid provisions, including flat grants, hold harmless guarantees or partial recapture provisions, all of which tend to reduce the equalization that can be accomplished. In pure form, however, it is generally recognized that a district power equalizing system of providing state aid to local school districts is an acceptable way, other than complete state funding of elementary/secondary education, to meet the legally mandated standard of fiscal neutrality (Pierce et al., 1975, p. 41).

State support of postsecondary education has not involved intergovernmental fiscal adjustments such as those used in the support of elementary/secondary education because the institutions providing such education are not sponsored by lower level governments but, rather, are either entities of the state or privately controlled. Only the community college, of all postsecondary institutions, is governed by a local agency that, in many states, has the power to tax its residents. In fact, the community college evolved out of the elementary/secondary school system and did not develop, like other post-secondary education institutions, independently. The proponents of the

"6-4-4" plan, under which the public junior college was viewed as an extension of the local high school, apparently saw little reason to finance the additional two years of education, which they sought to make universal, differently from the way in which the first 12 years were financed.

Since community college attendance is not compulsory, some early finance systems did advocate the imposition of tuition charges on students enrolled in public junior colleges since those institutions competed with others, both public and independent, that offered comparable programs. The 1932 Carnegie Report to the governor of California recommended that junior colleges be controlled and financed by the state so as to assure an equitable sharing of the costs among the state, local communities and students across all communities (Seashore, 1940, p. 28). In 1947, the President's Commission on Higher Education advocated the elimination of tuition in all public lower division postsecondary education programs, a position that would have satisfied critics who held that the public junior college should not be the only tuition free public postsecondary education institutions. The proposal was not supported, however, by any federal incentives that might have motivated the states to comply with its idealism and the imposition of tuition charges at public junior colleges developed as a matter of state policy, with the result that tuition, although low, varied between institutions within states and, on average, among states.

By the 1950s, two major systems of public junior colleges had been established, in California and New York, and each one was financed in a significantly different manner. In the California system, public junior colleges were viewed as components of the elementary/secondary education system and as such were tuition free. As local institutions, California public junior colleges were expected to acquire some portion of their revenues from the local district.

State aid, originally provided completely on a flat grant basis, was equalized through a foundation program with a flat grant component (California Post-secondary Education Commission, 1977, p. 12). In New York, a pattern was established providing that the costs of public junior colleges be divided equally among students, local sponsoring communities and the state.

Diekhoff, a critic of both these systems, felt that the financial involvement of the state would interfere with the local control of junior colleges. As a result, he advocated higher tuition charges for students who could afford to pay them while he admonished communities for not making a sufficient effort to provide the remainder of needed funds (1950, p. 69). In 1952, the Commission on Financing Higher Education reiterated this attitude toward local funding of public junior colleges although, in a repudiation of the 1947 Commission, it based its recommendation on the belief that the contributions of junior colleges to higher education were incidental (Millet, 1952).

Systems of funding community colleges, therefore, developed within the states, on an individual basis, with little guidance and almost no funds provided by the federal government. Generally, states viewed community colleges as egalitarian institutions and tended to keep both entrance requirements and tuition levels at a minimum in order to promote attendance by any high school graduates (Lombardi, 1976).

Much of the work of community college finance analysts has been directed at examining these different financial arrangements among the states. In 1956 Medsker studied state finance systems and noted that three patterns emerged by which states funded the current operating expenses of community colleges. First funds could be appropriated to the colleges or to an agency

responsible for their operation directly from the legislature. Second, a formula could be established under which the state paid a fixed amount per unit of "task," such as the FTE student. A variation of this method, in states where a local district contribution was required, included an equalization feature that allowed the state to guarantee a foundation revenue level that was shared between the state and local district, with the state share inversely proportional to the local district's wealth. Under the third pattern, the state paid a fixed proportion of the costs per task unit. Despite these primary patterns, the proportion of revenues provided by the state, local districts and students varied widely among the states. In 1956, the states provided between 1 percent and 50 percent of all current operating revenues while tuitions ranged between $0 and $300. Medsker concluded from his examination that the financing of public junior colleges was "in a state of confusion, since, as institutions, these colleges [did] not conform to the established patterns of either the institutions above them or those below them" (1956, p. 248).

Two years after Medsker's study, Martorana sought to discover the relationship between financing systems and organizational patterns for community colleges through a survey of 247 of the nearly 400 institutions. He found that institutions that were operated as extensions of the public elementary/secondary school system had the highest levels of local support while state aid remained, on average, less than one-third of all revenues. Institutions that were state controlled received state aid, on average, in excess of 50 percent of their total revenues. Local junior college districts tended to obtain approximately equal proportions of revenue from state and local sources. Tuition remained low as a proportion of all revenues under each of these systems (1958, pp. 151-57).

Medsker improved upon his earlier study in his 1960 analysis of California's system of financing its 63 public junior colleges. Going beyond mere description, Medsker assessed the strengths and weaknesses of the state's funding system. Under the system, state aid of $125 per student in average daily attendance was appropriated to local districts while the state guaranteed an additional $285 through a foundation program that required a local contribution of 35 cents per $100 of local assessed valuation. Since students were permitted to attend any institution, even if they resided in an area that was not a legally defined district, a complex system of inter-district charges was included as well as a means of taxing non-district areas in which any students lived. Medsker felt that the level of local contribution, nearly 60 percent of all operating expenditures, on average, was too high, particularly since the institutions enrolled nearly three-fourths of all full-time lower division students in the state. He believed that the institutions were impared in their claims for support because, at the local level, they enrolled fewer students than elementary/secondary schools while, at the state level, they lacked the prestige of a four-year institution of higher education. While Medsker called for an increase in state aid and the maintenance of a zero tuition policy, he clearly justified such a system on the popularity of the institution and not on any assessment of its accomplishments or a concern for equalization.

A 1966 study by Thornton confirmed Medsker's fears concerning the relationship between government appropriations to community colleges and institutional expenditure levels. He documented the problems that resulted when costs increased at the same time that state revenues were constrained and limits on tuition were mandated by states. Where local tax burdens would no longer sustain expenditures, Thornton expected that increases in fees and

new federal aid would only provide temporary relief and he, like Medsker, called for substantial increases in state support (1966, p. 283). Since 1966, with the rapid growth in both community college enrollments and the per student costs of operation, the determination of an appropriate level of state financial involvement has been a central topic of debate. One indication of the general shift that has taken place from a reliance on local support to one on state support is that prior to 1930 laws were passed prohibiting the use of state school funds for public junior college support while in the 1970s states were being asked by their citizens to eliminate local property taxation as a means of support for community colleges (Wattenbarger and Cage, 1974, p. 20). Between 1929 and 1968, state aid to community colleges did increase from an average of less than 5 percent to nearly 50 percent of all revenues.

Current systems of state support for community colleges are summarized in Table 1. Most states, regardless of whether local districts provide revenues to institutions, use a flat grant aid system. Most states use the FTE student as the unit of funding. Some states differentiate the support they provide on the basis of institutional characteristics, program characteristics or student characteristics. Among institutional characteristics, size and cost variations have received attention. The number of programs for which cost differentials are calculated tends to be at least two, liberal arts and vocational education, but in some states more than 20 programs may be considered. States tend not to focus on student characteristics in providing direct support to community colleges although in a couple of instances the level at which the student is working or his legal residence may be considered. Most states attempting to deal with inter-district variations in property wealth do so through a foundation program, a relatively ineffective mechanism, as discussed previously, unless the foundation level is set high relative to

TABLE 1

CHARACTERISTICS OF SYSTEMS OF STATE SUPPORT FOR COMMUNITY COLLEGES IN 1976*

State	Unit of Funding	Type of State Support	Differential for Institutional Characteristics	Differential for Program Characteristics	Differential for Student Characteristics
Alabama	institution	flat grant	no	no	--
	FTE student	flat grant	no	no	no
Alaska	credit hour	flat grant	no	no	no
Arizona**	FTE student	foundation program	yes, size	yes	no
Arkansas	faculty position	flat grant	no	yes	no
California	student in ADA	flat grant	no	no	no
	student in ADA	foundation program	yes, size	no	yes, adults vs non adult students
Colorado**	state operated: none***				
	locally operated: FTE students	flat grant	no	yes	yes, state residents only
Connecticut	none				
Delaware	none				
Florida	FTE student		yes, size and cost of living	yes	no
Georgia	faculty positions	flat grant	no	no	no
Hawaii	credit hour	flat grant	yes, differential among islands	yes	no
Idaho**	none				
Illinois**	credit hour	flat grant	no	yes	no
	FTE student	foundation program			
Indiana	none				
Iowa**	FTE student	flat grant	yes, enrollment decreases	yes	no
Kansas**	credit hour	flat grant	no	no	no
Kentucky	none				
Louisiana	credit hour	flat grant	yes, in some programs a reduction occurs for size	yes	no
Maine	none				
Maryland**	FTE student	proportion of expenditures up to a flat grant limit	yes, two small colleges are treated specially	no	no
Massachusetts	none				
Michigan**	FTE student	foundation program	yes, size and number of campuses	yes	no
Minnesota	faculty position	flat grant	no	no	no
	institution	flat grant	no	no	--
Mississippi**	institution	flat grant	no	no	no
	FTE student	flat grant	no	yes	yes, resident day students vs part-time and evening students
Missouri**	credit hour	proportion of expenditures up to a flat grant limit	no	no	yes, state residents only
Montana**	institution	flat grant	no	no	no

To be continued.

Table 1, continued.

State	Unit of Funding	Type of State Support	Differential for Institutional Characteristics	Differential for Program Characteristics	Differential for Student Characteristics
Nebraska	FTE student	flat grant	no	no	no
Nevada	faculty position	flat grant	no	no	no
New Hampshire	none				
New Jersey**	FTE student	proportion of expenditures up to a flat grant limit	no	no	no
New Mexico**	FTE student	foundation program	no	no	no
New York**	FTE student	proportion of expenditures up to a flat grant limit	yes, full opportunity vs non-full opportunity campuses	no	yes, disadvantaged student ratio must be same as in population
North Carolina**	instructional unit, relationship between faculty positions and FTE students	flat grant	no	yes	no
North Dakota	student in attendance	flat grant with a requirement for a local contribution	no	no	no
Ohio**	FTE student	flat grant	no	yes	yes, by student level
Oklahoma**	FTE student	flat grant	no	no	no
Oregon**	FTE student	flat grant	yes, size	no	yes, state residents vs non-state residents
Pennsylvania**	FTE student	proportion of expenditures up to a flat grant limit	no	yes	no
Rhode Island	none				
South Carolina**	FTE student	flat grant	yes, size and cost of living	yes	no
South Dakota	none				
Tennessee	credit hour	flat grant	no	yes	yes, level
	institution	flat grant plus proportion of the credit hour grant	no	no	--
Texas**	contact hour	flat grant	no	yes	no
Utah	none				
Vermont	none				
Virginia	FTE student	informal formula used	no	yes	no
Washington	FTE faculty	flat grant	no	yes	no
West Virginia	faculty position	flat grant	no	yes	no
Wisconsin**	FTE student	percentage equalizing	no	yes	no
Wyoming**	FTE student	foundation program	yes, size	yes	no

*Based on information contained in Wattenbarger and Starnes, Financial Support Patterns for Community Colleges, 1976.

**States in which local revenues exceeded 10 percent of all revenue from state, local, and student sources.

***None as a designation for a state's unit of funding indicates that a formula is not used in allocating state aid to community colleges. Under these circumstances, institutional appropriations are generally negotiated.

actual costs. What is not included in Table 1 is the state's policy toward either the local district contribution or the tuition level. Some states establish maximum rates at which local districts can tax themselves. Such a mechanism clearly discriminates among districts since they differ in the amount of revenue that can be generated at that rate. Some states also impose limits on the tuition that can be charged to students. In conjunction with other state financing policies, a tuition limit can result either in a large tax burden being placed on local districts or in districts having to restrict their expenditures.

PROBLEMS IN THE FUNDING OF COMMUNITY COLLEGES

Typically, community college districts determine the expenditure levels of their colleges within the constraints imposed by state aid receipts, tuition levels and local willingness to support the institution. State support of the community college is usually generated through a formula that provides either a fixed amount per student or a proportionate amount of the cost per student, as shown previously. Embellishing this basic structure may be factors related to characteristics of institutions, programs or students.

Recently, analysts of community college financing have attempted to establish criteria against which to assess how well a particular fiscal system operates. While there is not universal acceptance of these criteria, the fact that they are discussed at all indicates some movement away from the purely horatory recommendations for increasing state aid to the determination of appropriate funding levels on the basis of an analysis of the effects they have on community colleges. Wattenbarger and Cage have reported the results of a 1969 study by Arney that produced one set of criteria by which to evaluate state support systems. Arney's criteria were derived from those being used

by states to evaluate their own support systems. As such, the criteria were influenced by state historical patterns and political necessity and were not objective. Arney's criteria included the following:

1. The state should consider the community college level of education to be a part of the publicly supported system of education as evidenced by a state provision of support.

2. The state should provide equal educational opportunities to any individual who might benefit from a community college education.

3. The state should provide support for all programs offered by community colleges, including those for which credits are not offered.

4. The state should provide for coordination of community colleges and, through a charge back tuition system, make provision for districts without community colleges to share in funding the expenses for their residents who are attending such a college in another district.

5. Local support should be provided to community colleges.

The problem with these criteria is that there is almost no way to operationalize them. Arney did not discuss the specific way in which local and state support could be coordinated and his analysis of the states was an examination of the extent to which the state, local districts and students provided revenues to community colleges. The implication was that no revenues from students, low revenues from local districts and high revenues from the state would maximize a state's assessment against these criteria. Similarly, while Wattenbarger and Cage called for objective formulas to be used in distributing state aid, they did not attempt to evaluate the affects of alternative distributional systems, such as flat grants or matching grants, against Arney's or any other set of criteria (1974, Chapter 6).

Lombardi has discussed the need for providing incentives to promote institutional efficiency among community colleges. Although he also reviewed the state allocation formulas used by states, he neither made specific recommendations about how to introduce incentives that would promote such

efficiency into formulas nor indicated how the relationship between state and local funding might influence such efficiency (Lombardi, 1973). Wattenbarger and Starnes have most recently examined state support patterns for community colleges. While they discussed criteria similar to those mentioned previously, they did not attempt to assess how well each of the state's financing systems met those criteria. In addition to their review of the states, however, they did mention certain characteristics of all formulas that could have a negative affect on community college operations, particularly in periods when enrollments were declining. These characteristics all are based on the average cost approach taken by most formulas, under which costs are not differentiated by program, economies of scale are not taken into affect and marginal costs are not used to differentiate between the costs of new programs and those of well established programs (Wattenbarger and Starnes, 1976). While some states do consider variations in institutional and program characteristics, few of them have incorporated factors related to declining enrollments, the different costs associated with part-time and full-time students, or the geographic location of the institution.

Garms has recently completed the most extensive analysis of the alternative ways in which states and local districts can share the burden of supporting community colleges. He identified nine criteria by which to judge community college systems. He claims that the public finance system should promote:

1. The elimination of barriers to attendance
2. The offering of courses not available at other postsecondary institutions
3. Responsiveness by institutions to community preferences
4. The preservation of independent institutions
5. The expansion of institutions within fiscal constraints
6. The prevention of program duplication among institutions

7. Institutional efficiency

8. Inter-student equity, in terms of expenditures and tuition payments

9. Inter-district equity, in terms of tax burdens

Garms discussed the general characteristics of several types of financing systems in current use and assessed those systems against these criteria. The assessments were not based on precise ways of measuring each criteria but rather on an interpretation of how well systems met each criteria on a one-to-five scale. Having judged that no finance systems actually used by states met each of the criteria well, Garms proposed a scheme, a modified power equalizing system with a state aid program to relieve the impact of a relatively high tuition requirement, that he felt best met all criteria when a state required the provision of local district revenues. Under the system, tuition would be set at a level to furnish 50 percent of the current operating expenditures of each institution while the state would guarantee a level of revenue per capita, rather than per student as is recommended for elementary/secondary school finance programs, at every possible tax rate. One of the primary arguments supporting the use of per capita rather than per pupil measures of fiscal capacity for community college districts is that the institutions are designed to serve a broad population although attendance is not compulsory. By using a per capita measure, community colleges would not be given an incentive to expand their enrollments at state expense. Garms' plan also called for additional financial aid to be distributed as an entitlement to individual students based on an assessment of their financial needs.

Essentially, there are three problems that result from the current ways by which states support community colleges. First, in most states community college funding is isolated from the funding of other educational institutions. Community colleges tend to receive less support per student than other public

postsecondary institutions. At the same time, community colleges tend to enroll students from lower income groups as compared to other public institutions. Based on 1976 national standards for college freshmen, the median family income of community college students was $13,200 as compared to a median family income of $14,500 for students attending public four-year colleges and a median family income of $17,300 for students attending public universities (Calculated on the basis of information contained in Astin, King and Richardson, 1977, p. 48). Consequently, lower income students attend institutions that tend both to have lower expenditures and to receive lower levels of state support than other public postsecondary institutions. Despite the lower tuition paid by community college students and the use of revenues from local community college districts, the equity of such a system has been questioned from several different points of view. Hansen and Weisbrod's study of the California postsecondary system indicated that there was a redistribution of income from lower to higher income families, considering both the subsidies received through enrollment in a public institution and the taxes paid to support the public postsecondary system (1969). Several studies have drawn similar conclusions in other states (See Windham, 1976 and the Commission on Financing Postsecondary Education, 1976). It should be noted that Joseph Pechman and others contend that the calculations made in these studies, based on categories of users of the education system, are inappropriate for measuring equity since they do not consider intergenerational transfers (See Pechman, 1970 and Conlisk, 1977). In spite of this debate, it seems inappropriate not to support programs offered in community colleges at a level comparable to that of similar programs in other public postsecondary institutions, particularly when the credits earned in those programs are transferable and, hence, are viewed as having comparable value by the state.

At least three other questions arise in connection with inter-sectoral expenditure or state support disparities. These questions are primarily related to efficiency concerns in the distribution of state support for postsecondary education. First, under a policy of accepting students independent of any academic criteria, with the debatable exception of a high school degree requirement, community colleges are expending increasingly larger amounts on students enrolled in remedial or developmental programs. The states must confront the issue of the extent to which they should support elementary/secondary education and, in addition, support additional training at the same level in community colleges. Second, the state is the primary supporter of institutions and, as such, must be concerned about their financial stability as well as the extent to which institutions, individually or in groups, are contributing to the achievement of statewide educational goals. State aid formulas used in the support of most postsecondary institutions, particularly community colleges, do not take into consideration the financial vitality and viability of the institutions. It may be necessary in the future to distribute limited state funds in a manner which best promotes the attainment of state goals rather than through objective formulas that minimize inter-institutional differences. Finally, states have tended to fund institutions on input criteria, the number of professors, square feet, or library books throught to be necessary to provide an adequate education. These input factors have rarely been related to output products of institutions. It could be argued that the distribution of state funds should be related to the aggregate value added by institutions to the state's educational resources. Under such a system, community colleges would conceivably be supported at a higher level per student than other types of institutions. In any case, considering both equity and efficiency criteria, states should support community colleges in

the context of all the other educational opportunities being supported by the state rather than isolating that sector from other institutional sectors.

A second problem arises because the majority of appropriations to community colleges from local districts are derived from taxes levied on the real property located in the district. Since districts within a state differ in their assessed valuations, there is a variance among districts in their ability to raise equal amounts of revenue at the same tax rates. Such a variance may lead to concurrent variances in expenditure levels and/or tuition rates among districts. The equity of a situation in which expenditure levels or tuition rates are related to the wealth of community college districts can be questioned for many of the same reasons that the relationship between expenditure levels and the wealth of elementary/secondary school districts has been questioned. While the underlying responsibility of the state toward elementary/secondary schools is different from the responsibility of the state toward community colleges, from both a historical and an operational perspective, there is little justification for the state to support a financing system that permits the instructional expenditures of community college districts, controlling for varying enrollments in programs of different cost, to be determined by the wealth of community college districts.

Community college analysts have addressed this problem and have called for the inclusion of equalization aid in state programs that support community colleges. While many states provide financial support to community colleges through systems that do not alleviate the wealth disparity among districts, a number of states distribute state aid in a manner that is designed ex ante to reduce the possibility that district decisions concerning expenditure levels or tuition rates will be related to district wealth. Little empirical research has been conducted, however, that indicates either the extent to which

such inter-district inequities exist in the states or the extent to which state aid contributes to alleviating any of the inequities that do exist.

There are a number of reasons why the extent of the inequities among community college districts might be smaller than the inequities that exist for elementary/secondary school districts. First, it is generally accepted that as state aid rises as a proportion of expenditures, inter-district expenditure or tax rate variations decrease since the local district's contribution to total revenues decreases. This becomes more complicated for community college districts because while the local district contribution may decrease with increasing state aid, the proportion of all revenues provided by tuition may still vary across districts and it would be inequitable if tuition rates varied inversely with district wealth. In 1975-76, there were 19 states in which less than half of all community college current revenues, excluding revenues from auxiliary enterprises, were derived from the state at the same time that local district revenues exceeded 15 percent of all such revenues and the sum of local district and tuition revenues exceeded one-third of those revenues (Mertins and Brandt, 1976). These states, in which inter-district inequities would be most likely to exist, enrolled nearly 75 percent of the 1976 community college FTE student population, however (Eldridge, 1977, Table 4).

Second, community college districts tend to be large, often including numerous elementary/secondary school districts, and their size should contribute to a reduction in the wealth disparity among districts as compared to that found among the elementary/secondary school districts of which they are composed. Nonetheless, in New Jersey, for example, the variation in equalized assessed valuation per pupil among community college districts was between $833,000 and $3,807,000 in 1976 (Commission on Financing Postsecondary Education, 1977, Table 3).

Finally, since attendance at community college is not mandatory and students who choose to pursue a postsecondary education at all may do so at many of the over 3,000 institutions across the country, it is likely that the educational preferences of the population of a community college district will be heterogeneous. This heterogeneity probably reduces the impact of district socioeconomic characteristics in determining district expenditure levels, a relationship that has been shown to exist among elementary/secondary school districts, with the likelihood that there will be less variation in expenditures among community college districts than is commonly found among elementary/secondary school districts. Community colleges, however, enrolled over 52 percent of all first-time students in 1976 (Eldridge, 1977, Table 4) and the majority of community college students attended institutions located in the district in which they resided. Thus, while the magnitude of the fiscal inequities that exist for community college districts are expected to be smaller than those that have been found among elementary/secondary school districts, whatever inequities do exist are affecting a large proportion of all community college students.

At least two standards have been used in assessing expenditure disparities among elementary/secondary school districts. These standards have evolved out of the school finance legal activities of the past decade, particularly the Serrano decisions in California. The first of these, expenditure per student equality, requires that average expenditures per student be similar across all school districts. The second standard, fiscal neutrality, requires that expenditure per student variations among districts not be related to district wealth. Given the different responsibility of the state toward community colleges, as compared to elementary/secondary schools, and given the development of intergovernmental fiscal relations, the use of the fiscal neutrality standard

would appear to be more appropriate in assessing inter-district equity in community college finance, although even the use of this standard has been questioned (Nelson, 1977). Two studies have previously been undertaken that examine how state aid is distributed to local community college districts and the impact of that aid on equalization. These studies, in California and New Jersey, demonstrated that, in fact, property wealth varied among community college districts, as did expenditures per student, and that the strength of the relationship between the two was reduced when state aid was considered. In New Jersey, it was shown that in 1975-76, the tax effort made by community college districts was only weakly correlated with the amount of local funds generated by the districts, one indication that a wealth related problem could exist. One measure used to ascertain how well the distribution of state aid overcame this problem was tax power, the sum of local and state revenues per student per mill of local tax effort. It was shown that, under the flat grant system used by the state to distribute grants to community college districts, differences in tax power persisted even after state aid was considered. The range in tax power was between $16.70 and $126.80 per student per hundredth mill of local tax effort. The standard deviation of tax power, which would be 0 if all districts had equal tax power, was $30.30. A second measure, the correlation between local tax effort and the sum of local and state revenues, proved to be weak (Commission on Financing Postsecondary Education, 1977, p. 31). Several alternative state financing systems were examined within a similar framework although it was found difficult to compare the systems since the two measures of equity conflicted, making it difficult to determine which of the alternative systems was the most equitable.

The study in California examined the relationship between community college district expenditures and a set of variables that were expected to be important

determinants of those expenditures. The authors of the study emphasized that the critical differences between elementary/secondary schools and community colleges was the lack of a mandatory attendance requirement at community colleges, resulting in a variance not only in wealth and expenditures among community college districts but also in the proportion of the population attending the institutions. They found that "state aid (permitted) higher participation, and because participation overshadows the relationship between average per-capita income and wealth in districts, and because participation is negatively related to income, the net effect of state equalization aid is to equalize per student spending and tax rates" (Cothran and Thompson, 1976, p. 7). This analysis relied heavily on correlation statistics, with the conclusion drawn about the influence of state aid based on the relationships between a number of variables. The analysis also focused on individual taxpayer equity rather than on inter-district equity. As such, the study raised important questions about equity but did not clearly test the degree to which the current state aid system, or alternative systems, contributed to improving inter-district equalization.

There are several reasons why disparities in expenditures would be likely to exist among community college districts. First, different educational programs require different expenditure levels and since students are free to choose the programs in which they enroll, it is not unexpected that districts would, on average, have different expenditure patterns. What should be measured in assessing inter-district expenditure disparities is the extent to which actual average expenditures differ from some expected average expenditure level, based on differential program costs, as well as the degree to which discrepancies from the expected expenditure level are related to district wealth. In addition, district expenditure levels are related, in part, to tuition levels. Actual

expenditures need to be compared to the expenditures that could have been made had some statewide average tuition charge been required by the district. Districts may, in fact, be required to have different expenditure levels in order to attract staff of equal quality. Cost-of-education variations among districts would cause permissible disparities in expenditures for personnel as well as other factors related to the provision of educational opportunities. Only when these differences in program cost, program enrollments and tuition level are controlled can an appropriate examination of the inter-district expenditure disparities and their relationship to district wealth be made.

Two additional difficulties that arise in assessing the relationship between expenditures and wealth for community college districts involve the definition of district wealth and the determination of the appropriate task unit for measuring both expenditures and wealth. Like elementary/secondary school districts, community college districts rely on assessed property as their tax base. In both situations, however, property owners pay their taxes out of their current incomes and the distribution of income is not necessarily highly related to the distribution of property wealth among district residents. When property wealth is used as the measure of fiscal capacity in the distribution of state grants to local jurisdictions, it is possible that state funds may not relieve the tax burden on less affluent individuals. This becomes a particular problem when either the proportions of commercial, residential, agricultural or vacant property differ among districts or property assessment practices differ among districts, situations that have been documented in elementary/secondary school finance. Several states currently incorporate district income in assessing district wealth for the purpose of distributing state aid for elementary/secondary schools. In states where income is not considered directly, property tax relief measures, such as circuit breakers, are designed to limit the property tax liability of individuals in light of their income.

In terms of the second difficulty, the task unit, there has been little debate in the elementary/secondary school arena that the appropriate task unit is the pupil and that expenditures and wealth, however defined, are best measured in per pupil terms. This is true since differences among the number of persons of school age are not viewed as being under district control, while most children of that age attend public schools. The difference at the community college level is, of course, that attendance is not mandatory with the result that districts can differ widely in the proportion of district population they serve. In New Jersey, for example, the proportion of the population over 18 years old attending community colleges varied from .46 percent to 2.17 percent in 1975-76 (Augenblick, 1977). It has been suggested that a more appropriate funding unit for the community college district is the resident rather than the enrolled student. Using this unit, the wealth measure would not be sensitive to differences in the services provided by districts but would focus on the tax base per potential user of the service. A number of public services are supported through intergovernmental grants based on such a per capita wealth measure, including federal revenue sharing programs and a number of state welfare, health and education programs. The use of the per student or per capita measure is likely to result in both different incentives for district behavior as well as differences in the characteristics of districts that would receive relatively greater amounts of state aid.

The third problem is tuition. Traditionally, community colleges have sought to provide programs at very low cost or no cost, not including "maintenance expenses," to the student. As indicated previously, tuition levels have been increasing at a rapid rate among community colleges although even a large increase on an already low tuition level may result in only a modest

absolute increase. The real problem, however, is that tuitions can vary more widely among community college districts than median family incomes, and, in conjunction with the inter-district equity problem cited above, such a situation can result in less wealthy districts having to charge a higher tuition level than their more affluent neighbors in order to provide a program of similar total cost. While the state can tolerate some variation in tuition level, in part to permit local control of community colleges, it should consider the different abilities of students' families to meet tuition costs, much as it should consider the different abilities of local districts to provide support to community colleges. In the case of high tuition levels, the state can promote access to community colleges, some states have set a tuition ceiling, permiting a variation among institutions below the ceiling. Of course, the lower the ceiling, the less variation there is likely to be in tuition levels among institutions. Similarly, with a lower tuition ceiling it is less likely that students will require, or even be eligible for, student aid since most student aid programs normally have a student "self-help" component that can be as high as $500.

If student financial aid is a mechanism used by the state to equalize the burden of community college costs for its students, several problems must be considered. First, states often discriminate among students for the purposes of distributing student aid. Part-time students, particularly those enrolled less than half-time, are often ineligible for aid. Larger number of part-time students attend community colleges than any other sector. Second, there has been some concern expressed about the system used by colleges to assess the financial position of students. One point receiving increased attention is the problem associated with independent students and the inability of the financial aid system to

recognize such students appropriately, resulting in students who are classified as independent receiving high levels of aid or being ineligible to receive aid at all. Again, this problem has a large impact on community colleges since they enroll a disproportionate share of independent students compared to other institutions. Finally, there is the problem of student maintenance expenses. Students incur expenses in attending community colleges that exceed tuition and fee costs. While federal student aid programs are viewed by some as aimed primarily at these additional expenses, states should consider the impact of their policies on the flow of federal student aid since many of these programs, particularly basic grants, are sensitive to tuition levels.

COMMUNITY COLLEGE FINANCE IN ILLINOIS, 1975-76

The public junior college system was organized in Illinois in 1965. Between 1965 and 1969 the system was funded by the state through a two-tiered flat grant mechanism under which $11.50 per semester credit hour produced was paid to class I institutions, those located in districts that levied a separate community college tax on residents, and $9.50 per semester credit hour produced was paid to all other, class II, districts. Tuition charges were permitted under this system at the discretion of the district and in the initial year of operation 13 of 19 districts levied a tuition charge of between $2 and $10.50 per semester credit hour of enrollment. In 1970 a recommendation was made to equalize the distribution of state support on the basis of the equalized assessed property of each district. Although the flat grant was increased to $15.50 per semester credit hour and class II districts were no longer recognized, no funds were appropriated specifically for the proposed equalization program. In 1972, however, $1.05 million of the total

state appropriation of $48.2 million to community colleges were earmarked for an equalization program. In 1973 the flat grant was raised to $16.50 per semester credit hour, with an additional $2.50 to be paid per semester credit hour produced in non-business occupational courses, and $1.4 million was appropriated for the equalization program. In 1974 additional funds were made available to provide additional support for disadvantaged students and public service activities. In 1975, actual enrollments exceeded those used in making funding estimates by over 20 percent and the flat grant rate was reduced proportionately, resulting in an $18.12 rate, an additional $5.80 for non-business occupational credit hours, although the equalization fund appropriation was $3.15 million. The distribution of the equalization aid was based on a foundation per student expenditure level of $508 and a 1.8 mill expected local district tax rate. In 1975-76, average per student community college expenditures exceeded $1,300, more than 2.5 times the foundation level. In that same year, tuition was charged in 38 of the state's 39 districts, with a range of between $4 and $17 per semester credit hour and an average of $9.70 per semester credit hour. In 1975-76, on average, local districts provided $16.46 per semester credit hour through locally levied taxes.

Basic information for 37 of the 39 Illinois community college districts is presented in Table 2. Two districts have not been included in the table. One of them is a fully state supported school and the other was opened a year prior to the 1975-76 year for which information has been displayed. As shown in column 2, equalized property wealth per FTE student differed among districts, with the richest district having over seven times the wealth of the poorest district using this measure of wealth. Income wealth, displayed in column 3, also varied among the districts although the inter-district disparity, as measured by the range, was not as high, almost 5.5 to 1.0, as that found

TABLE 2

COMMUNITY COLLEGE FINANCE DATA ON A
PER FTE STUDENT BASIS IN ILLINOIS FOR 1975-76

District Number (1)	Equalized Property Wealth (2)	Income Wealth* (3)	Total Revenues (4)	Local District Revenues (5)	Local District Tax Rate** (6)	Tuition and Fees Revenues (7)
1	$278,576	$373,708	$1,557.86	$ 694.70	2.494 mills	$182.77
2	401,071	524,714	1,458.15	429.23	1.070	436.77
3	215,859	294,795	1,476.47	301.73	1.398	398.40
4	231,415	224,743	1,488.57	325.15	1.405	432.17
5	377,533	373,571	1,806.89	676.83	1.793	476.25
6	266,507	318,834	1,492.41	398.15	1.494	422.81
7	230,034	350,119	1,634.94	503.19	2.188	379.32
8	236,197	441,423	893.17	359.67	1.523	80.52
9	345,304	511,859	1,781.82	828.95	2.401	356.78
10	222,858	451,310	1,493.81	316.10	1.418	543.69
11	411,715	470,003	1,531.15	443.85	1.078	507.92
12	304,907	344,079	1,572.58	439.76	1.442	491.44
13	387,980	373,370	1,475.95	696.86	1.796	209.84
14	373,207	445,580	1,733.06	705.37	1.890	400.68
15	269,670	433,436	1,399.17	275.71	1.022	485.09
16	360,202	450,403	1,420.59	469.15	1.303	301.72
17	306,510	354,451	1,470.52	400.21	1.306	358.69
18	427,267	504,863	1,630.18	641.63	1.502	289.08
19	294,016	416,308	1,760.53	780.42	2.654	330.25
20	304,660	359,412	1,678.56	557.05	1.828	359.56
21	189,519	295,392	1,398.21	463.11	2.444	146.75
22	270,430	409,855	1,358.99	392.83	1.453	328.39
23	247,720	267,816	1,488.20	428.61	1.730	343.26
24	300,551	435,522	1,561.93	643.97	2.143	329.83
25	352,474	297,327	1,372.73	399.42	1.133	295.67
26	479,082	622,981	1,853.83	906.67	1.893	358.16
27	391,363	582,121	1,879.61	919.92	2.351	319.27
28	460,377	525,949	1,671.72	564.46	1.226	508.95
29	108,118	134,378	1,166.50	266.65	2.466	21.59
30	198,682	347,524	1,697.72	498.03	2.507	167.46
31	91,993	151,434	1,159.51	192.77	2.096	105.92
32	287,334	474,251	1,558.49	539.55	1.878	332.61
33	210,524	316,531	1,368.01	508.45	2.415	97.36
34	467,684	482,796	2,052.70	1,145.88	2.450	236.44
35	441,993	511,234	2,301.95	975.51	2.207	463.13
36	301,428	422,930	1,555.62	628.42	2.085	316.89
37	650,707	733,034	2,188.48	1,256.04	1.930	368.69

*Calculated on the basis of adjustments to 1975 county per capita income data.

**Calculated by dividing column (5) by column (2) and multiplying the quotient by 1000.

for property wealth. Total revenues per FTE student, including all sources, are shown in column 4. The ratio of the highest to lowest average expenditures per student was 2.5 to 1.0 although the absolute difference was over $1,400. Local districts provided substantially different levels of revenue to community colleges, as shown in column 5, at tax rates that varied between approximately 1.1 mills and 2.7 mills, as displayed in column 6. All community college districts received revenues from tuitions and/or fees in 1975-76 and while a majority of districts received between $250 and $450 per FTE student, the difference between the highest and lowest average tuition/fee revenue per FTE student exceeded $500, as indicated in column 7.

While the data shown in Table 2 indicate that disparities existed among community college districts for each of the variables included, it is not clear what relationship existed among the variables, particularly the relationships between district wealth and district behavior in terms of expenditure, tuition, and tax rate decisions. The figures contained in Table 3 can be used in beginning to understand these relationships. Within each column in Table 3 each district's proportion of the state total for particular variables is shown. The districts have been ranked, from low to high, by their total per student revenues, as indicated previously in Table 2 and shown, rounded to the nearest dollar, in column 6 in Table 3. For example, district 8 has the lowest total for per student revenues of any district in the state and it enrolled 30.5 percent of all FTE students in the state, as shown in column 2. If wealth were distributed in proportion to enrollments, so that each district had a similar amount of wealth per student from which to generate revenues, the proportion of enrollments shown in column 2 would match those for property wealth, shown in column 3, and those for income wealth, shown in column 4, for each district. In fact, for most districts discrepancies arise in comparing

TABLE 3

PROPORTIONS OF TOTAL ENROLLMENT, TOTAL WEALTH AND TOTAL REVENUES FOR COMMUNITY COLLEGE DISTRICTS ORDERED BY TOTAL REVENUES PER FTE STUDENT IN ILLINOIS FOR 1975-76

District Number (1)	Proportion of Total FTE Enrollment (2)	Proportion of Property Wealth (3)	Proportion of Income Wealth (4)	Proportion of Total Revenues (5)	Total Revenues (6)
8	.305	.250	.330 (+)*	.201	$ 893
31	.010	.003	.004	.009	1,160
29	.025	.009	.008	.021	1,167
22	.029	.027	.029	.029	1,359
33	.005	.004	.004	.005	1,368
25	.033	.041 (+)	.024	.034 (+)	1,373
21	.008	.005	.006	.008	1,398
15	.018	.017	.019 (+)	.019 (+)	1,399
16	.015	.019 (+)	.017 (+)	.016 (+)	1,421
2	.052	.072 (+)	.067 (+)	.056 (+)	1,458
17	.016	.017 (+)	.014	.017 (+)	1,471
13	.013	.018 (+)	.012	.015 (+)	1,476
3	.031	.023	.022	.034 (+)	1,476
23	.010	.008	.006	.011 (+)	1,488
4	.051	.041	.028	.056 (+)	1,489
6	.012	.011	.010	.014 (+)	1,492
10	.028	.021	.031 (+)	.031 (+)	1,494
11	.022	.032 (+)	.026 (+)	.025 (+)	1,531
36	.017	.018 (+)	.018 (+)	.020 (+)	1,556
1	.009	.008	.008	.010 (+)	1,558
32	.027	.027	.031 (+)	.031 (+)	1,558
24	.03	.033 (+)	.034 (+)	.037 (+)	1,562
12	.042	.044 (+)	.035	.049 (+)	1,573
18	.009	.013 (+)	.011 (+)	.011 (+)	1,630
7	.013	.010	.011	.015 (+)	1,635
28	.008	.012 (+)	.010 (+)	.010 (+)	1,672
20	.012	.012	.010	.014 (+)	1,679
30	.010	.007	.008	.012 (+)	1,698
14	.033	.043 (+)	.036 (+)	.042 (+)	1,733
19	.007	.008 (+)	.008 (+)	.010 (+)	1,761
9	.015	.018 (+)	.019 (+)	.020 (+)	1,782
5	.022	.029 (+)	.020	.029 (+)	1,807
26	.017	.029 (+)	.027 (+)	.024 (+)	1,854
27	.010	.013 (+)	.014 (+)	.014 (+)	1,880
34	.005	.007 (+)	.005	.007 (+)	2,053
37	.007	.015 (+)	.012 (+)	.011 (+)	2,188
35	.022	.033 (+)	.027 (+)	.036 (+)	2,302

*Districts noted by a (+) are those that exceed their proportion of total FTE enrollment for a wealth or revenue measure.

column 2 with column 3 and column 2 with column 4. Where a district's proportion of total wealth exceeds its proportion of enrollments, a (+) has been placed next to the data in the wealth column. It is clear in the table that the probability of finding a (+) increases as one moves down columns 3 and 4, indicating that higher revenue levels tend to be associated with disproportionate shares of wealth. Similarly, if revenues per student were distributed equally among all districts, the proportion of total revenues should match the proportion of enrollments. A (+) next to the figures shown in column 5 indicates that a district's proportion of revenues exceed its proportion of enrollments. It is interesting that this occurs for most districts, with only six districts not conforming to the pattern, and only three of those districts had a smaller proportion of all total revenues than enrollments. It would appear that any problem related to unequal revenues among districts is caused primarily by district 8, which received slightly over 20 percent of all community college revenues in the state but enrolled over 30 percent of all students.

There are a number of ways to examine the relationship between district wealth and district per student revenue levels. In Table 4, the districts have been assigned to categories of property wealth per student and revenues per student. As the totals indicate, 15 districts receive total revenues between $1,400 and $1,600 per student. Of the 8 districts having less than $1,400 in revenues per student, 7 districts have less than $300,000 in property wealth per student. Of the 14 districts with greater than $1,600 in revenues per student, 11 districts have wealth greater than $300,000 in property wealth per student. Thus, while many districts fall within a relatively narrow range of revenues, there is a high probability that the districts with revenues below that range have lower wealth than districts with revenues above

TABLE 4

CROSS-TABULATION OF COMMUNITY COLLEGE DISTRICTS BY INTERVALS OF TOTAL REVENUES PER FTE STUDENT AND EQUALIZED ASSESSED PROPERTY WEALTH PER FTE STUDENT IN ILLINOIS FOR 1975-76

	Revenues Per FTE							
Property Per FTE	Less Than $1,000	$1,001 $1,200	$1,201 $1,400	$1,401 $1,600	$1,601 $1,800	$1,801 $2,000	Greater Than $2,001	Total
Less Than $100,000		1						1
$100,001- $200,000		1	1		1			3
$200,001- $300,000	1		3	7	2			13
$300,001- $400,000			1	6	3	2		12
$400,001- $500,000				2	2	1	2	7
Greater Than $500,001							1	1
Total	1	2	5	15	8	3	3	37

TABLE 5

CROSS-TABULATION OF COMMUNITY COLLEGE DISTRICTS BY INTERVALS OF TOTAL REVENUES PER FTE STUDENT AND INCOME WEALTH PER FTE STUDENT IN ILLINOIS FOR 1975-76

	Revenues Per FTE							
Income Per FTE	Less Than $1,000	$1,001 $1,200	$1,201 $1,400	$1,401 $1,600	$1,601 $1,800	$1,801 $2,000	Greater Than $2,001	Total
$100,000- $200,000		2						2
$200,001- $300,000			2	3				5
$300,001- $400,000			1	5	3	1		10
$400,001- $500,000	1		2	6	2		1	12
$500,001- $600,000				1	3	1	1	6
Greater Than $600,001						1	1	2
Total	1	2	5	15	8	3	3	37

that range. The correlation coefficient between property wealth per student and total revenues per student is .71, one indication of the extent of the relationship between these variables. The relationship between income wealth per student and revenues per student, as displayed in Table 5, is not as strong when analyzed in these terms, although the correlation coefficient of .62 between these variables indicates a strong relationship.

In order to examine the relationship between income and property wealth, districts have been categorized by $100,000 intervals of these variables and cross-tabulated in Table 6. As shown, 25 districts have property wealth between $200,000 and $400,000 per student. Similarly, 22 districts have income wealth between $300,000 and $500,000 per student. Nineteen districts meet both criteria. Of those districts outside these ranges, all districts either have less than $300,000 of income wealth per student and less than $200,000 of property wealth per student or more than $500,000 of income per student and more than $400,000 in property wealth per student. The strength of this relationship is indicated by a correlation coefficient of .84 between income wealth per student and property wealth per student. In Table 7, districts have been categorized by levels of property wealth, income wealth and total revenues per student. Looking only at districts with revenue levels outside of the $1,400 to $1,600 range, it is clear that property wealth is a better predictor of revenue than income wealth. Of districts with less than $300,000 per student in property value, 7 of 10 districts receive revenues of less than $1,400 per student while 11 of 12 districts with over $300,000 per student in property value receive revenues in excess of $1,600 per student. Of the 9 districts with less than $400,000 in income wealth per student, 5 receive less than $1,400 in revenues per student while of the 13 districts with over $400,000 in income wealth per student, 10 districts receive greater than $1,600 per student in total revenues.

TABLE 6

CROSS-TABULATION OF COMMUNITY COLLEGE DISTRICTS BY INTERVALS OF INCOME WEALTH PER FTE STUDENT AND EQUALIZED ASSESSED PROPERTY WEALTH PER FTE STUDENT IN ILLINOIS FOR 1975-76

	Income Per FTE							
Property Per FTE	Less Than $100,000	$100,001-$200,000	$200,001-$300,000	$300,001-$400,000	$400,001-$500,000	$500,001-$600,000	Greater Than $600,001	Total
Less Than $100,000		1						1
$100,001-$200,000		1	1	1				3
$200,001-$300,000			3	4	6			13
$300,001-$400,000			1	5	4	2		12
$400,001-$500,000					2	4	1	7
Greater Than $500,001							1	1
Total		2	5	10	12	6	2	37

TABLE 7

CROSS-TABULATION OF COMMUNITY COLLEGE DISTRICTS BY EQUALIZED ASSESSED PROPERTY WEALTH PER FTE STUDENT, INCOME WEALTH PER FTE STUDENT AND TOTAL REVENUES PER FTE STUDENT IN ILLINOIS FOR 1975-76

	Property Per FTE			
	Less Than $300,000		Greater Than $300,001	
Revenues Per FTE	Income Less Than $400,000	Income Greater Than $400,001	Income Less Than $400,000	Income Greater Than $400,001
Less Than $1,400	4	3	1	
$1,400-$1,600	5	2	3	5
Greater Than $1,601	2	1	2	9

It is also of interest to examine the relationship between wealth and district tax rate and tuition/fee levels. Districts have been categorized by intervals of tax rate and tuition/fee revenues per student and cross-tabulated with district property wealth per student in Tables 8 and 9. As shown in Table 8, for districts with property wealth between $200,000 and $400,000 per student there is no pattern in tax rates. However, all four of the districts with less than $200,000 in property wealth per student had tax rates above 2 mills while 6 of the 8 districts with property wealth over $400,000 in property wealth per student made a tax effort of less than 2 mills, indicating a negative relationship between wealth and district tax rate. While a positive relationship between these two variables might be expected if property wealth were related to a district's preference for education, the negative relationship is a general indication that districts are taxing themselves to reach acceptable revenue levels. Oppositely, the relationship between district wealth and tuition rates appears to be positive. All 4 districts with property wealth below $200,000 per student received less than $200 in tuition/fee revenues per student while all 8 districts with property wealth in excess of $400,000 per student received more than $200 per student in revenues from tuition/fees. Apparently, districts do not use tuition revenues to equalize total revenues per student but set a tuition level appropriate to the average ability to pay of their prospective students.

One measure of the extent to which a state aid system is fiscally neutral is the variance in ability of each district to generate equal revenue levels per equal unit of tax rate. In Table 10, the dollars generated per mill of local district tax effort are displayed for various combinations of revenue sources. Since this measure is proportional to district wealth for local revenues, the figures displayed in column 2 are as disparate as the property

TABLE 8

CROSS-TABULATION OF COMMUNITY COLLEGE DISTRICTS BY LOCAL DISTRICT TAX RATE AND EQUALIZED ASSESSED PROPERTY WEALTH PER FTE STUDENT IN ILLINOIS FOR 1975-76

Property Per FTE	Tax Rate				
	1.000-1.500 mills	1.501-2.000 mills	2.001-2.500 mills	Greater Than 2.501 mills	Total
Less Than $100,000			1		1
$100,001-$200,000			2	1	3
$200,001-$300,000	6	3	3	1	13
$300,001-$400,000	4	4	4		12
$400,001-$500,000	3	2	2		7
Greater Than $500,001		1			1
Total	13	10	12	2	37

TABLE 9

CROSS-TABULATION OF COMMUNITY COLLEGE DISTRICTS BY TUITION/FEE REVENUES PER FTE STUDENT AND EQUALIZED ASSESSED PROPERTY WEALTH PER FTE STUDENT IN ILLINOIS FOR 1975-76

Property Per FTE	Tuition/Fees Per FTE						
	Less Than $100	$101-$200	$201-$300	$301-$400	$401-$500	Greater Than $501	Total
Less Than $100,000		1					1
$100,001-$200,000	1	2					3
$200,001-$300,000	2	1		6	3	1	13
$300,001-$400,000			2	7	3		12
$400,001-$500,000			2	1	2	2	7
Greater Than $500,001				1			1
Total	3	4	4	15	8	3	37

TABLE 10

DOLLARS GENERATED PER FTE STUDENT PER MILL OF LOCAL COMMUNITY COLLEGE DISTRICT TAX EFFORT FOR DIFFERENT SOURCES OF REVENUE IN ILLINOIS FOR 1975-76

District Number (1)	Local District Revenue (2)	Local District and State Flat Grant Revenue (3)	Local District, State Flat Grant and State Equalization Aid Revenue (4)	Local District and all State Revenues (5)	Total Revenues (6)
1	$278.58	$486.99	$512.16	$ 563.70	$ 624.71
2	401.07	878.88	878.88	1,016.59	1,362.49
3	215.86	584.60	663.71	831.34	1,056.27
4	231.42	599.89	631.13	744.66	1,059.44
5	377.53	665.80	665.80	768.12	1,007.88
6	266.51	618.45	618.45	775.02	998.97
7	230.03	467.98	500.17	596.14	747.41
8	236.20	567.12	567.12	656.97	694.08
9	345.30	558.31	558.31	621.71	742.23
10	222.86	579.80	611.95	821.86	1,053.17
11	411.71	884.74	884.74	1,071.39	1,420.29
12	304.91	661.55	661.55	748.39	1,090.35
13	387.98	672.57	672.57	722.80	821.74
14	373.21	645.28	645.28	718.62	916.95
15	269.67	779.86	795.95	1,021.70	1,368.52
16	360.20	754.99	754.99	864.93	1,090.70
17	306.51	713.56	713.56	863.77	1,126.23
18	427.27	781.36	781.36	909.20	1,085.55
19	294.02	484.08	492.54	570.09	663.26
20	304.66	585.18	585.18	722.75	918.03
21	189.52	408.92	447.83	523.19	572.19
22	270.43	629.91	659.34	770.54	935.55
23	247.72	551.62	563.39	700.24	860.12
24	300.55	539.04	543.76	607.76	723.98
25	352.47	804.52	804.52	910.90	1,211.38
26	479.08	749.56	749.56	845.45	979.56
27	391.36	607.29	607.29	666.68	799.65
28	460.38	881.57	881.57	1,051.68	1,363.47
29	108.12	319.01	393.89	453.44	472.98
30	198.68	400.96	445.76	490.97	677.28
31	91.99	346.84	393.52	487.69	553.34
32	287.33	560.24	560.24	634.24	829.96
33	210.52	431.15	446.40	509.39	566.42
34	467.68	682.80	682.80	754.30	837.80
35	441.99	671.47	671.47	714.96	1,042.99
36	301.43	549.32	549.32	647.84	746.17
37	650.71	910.65	910.65	997.89	1,133.77
Mean	$316.09	$622.05	$635.32	$ 739.97	$ 923.24
Standard Deviation	$108.79	$148.59	$136.95	$ 164.61	$ 244.11
Coefficient of Variation	.344	.239	.216	.222	.264

wealth per student figures previously displayed in Table 2. One measure of the disparity among all districts is the standard deviation of this data, over $108 for local revenues alone. When state flat grant revenues are combined with local revenues, the standard deviation of the dollars generated per mill rises to over $148 but, at the same time, the average figure for all districts rises to just over $622. Thus, state flat grants almost double the revenues generated per mill by local districts, or local tax power, but increase the disparity among districts by less than 40 percent. The coefficient of variation, the quotient produced by dividing the standard deviation by the mean for a set of numbers, can be used to compare the influence of different revenue sources since it takes both these components into account. The addition of state flat grant revenue reduces the coefficient of variation in the revenues generated per mill of tax effort to .239 from .344 for local revenues alone. When state equalization aid is considered, the coefficient of variation is further reduced to .216 by increasing the average dollars generated per unit of effort to over $635 while decreasing the standard deviation among districts to under $137. While the addition of other sources of state revenue, including support for public service activities and disadvantaged students, increases the average tax power to nearly $740, the standard deviation among districts increases to over $164, raising the coefficient of variation to .222. When all sources of revenue are considered, including federal aid, and tuition, the coefficient of variation further increases to .264, surpassing the level achieved when only state flat grants and local revenues are considered. Thus, state equalization aid does promote some equalization while the distribution of state aid other than flat grant and equalization support and the distribution of other revenues have disequalizing effects. One of the major questions raised by this kind of analysis concerns the most effective manner of distributing state and if equalization, as measured above, is one of the state's objectives. The choice of the

distribution mechanism and the proportion of all funds distributed in an equalizing fashion have a large impact on the "amount" of equalization achieved. The cost effectiveness of equalization needs to be examined carefully in light of the political or legal necessity to equalize.

Up to this point, the relationship between district wealth and actual district revenues/expenditures has been examined and both disparities and inequities have been noted. As mentioned previously, however, there are several reasons why district average expenditures might vary. In order to examine the degree to which actual expenditures differ from expected expenditure levels, a program adjusted expenditure figure for each district has been calculated on the basis of the district's actual proportion of enrollment in eight programs and the statewide average expenditures per student for those programs. Actual expenditures per student are shown in column 2 of Table 7 and program adjusted expenditures are displayed in column 3 of the same table. The program adjusted expenditure figure is a crude indicator of the permissible expenditure figure that would result if districts spent a sufficient amount to provide programs of average quality. This indicator does not take into consideration the inter-district expenditure variances that might be caused by cost-of-education differences. Permissible expenditure levels vary approximately between $1,506 per student and $1,671 per student, a differential in excess of 10 percent. In column 4, the difference between actual and program adjusted expenditure figures is shown. In absolute terms, the actual expenditures of districts differ from permissible levels by between approximately $8 and $861. The majority of districts are spending at levels below the permissible level. An interesting question that can be asked about these differences is the extent to which they are related to district wealth. In column 6, the difference between actual equalized assessed property wealth per student and

the statewide average property wealth per student is shown. The relationship between a district's variance from permissible expenditure levels and its variance from average property wealth can be investigated by comparing the figures in column 4 with those in column 6. It is striking that in 27 of the 37 districts, the sign of the variances are the same. The relationship between the magnitude of the variances is indicated by a correlation coefficient of .73 between them. The simple linear regression equation for predicting the variance in expenditure levels from the variance in wealth is as follows:

(actual - program adjusted expenditures per student) = 14.005 + 2.042 [(actual - mean property wealth per student) ÷ 1,000]

This equation indicates that for every $1,000 of difference between a district's actual property wealth and the statewide average property wealth per student there is a $2.04 expected difference between that district's actual expenditures per student and its program adjusted expenditures per student. With a range of $200,000 in property wealth per student as a conservative indicator of wealth disparity among districts, a $408 difference between actual and program adjusted expenditures is likely to be found. Thus, even taking into consideration allowable expenditure variations, district wealth and district expenditures are strongly related to each other.

It has also been mentioned previously that adjustments need to be made to district revenue/expenditure to account for inter-district variations in tuition/fee levels. One way to do this is by assuming that all districts could charge students at the mean tuition/fee level, with all districts charging below that level viewed as setting a lower than normal price and all those charging above that level viewed as setting an inordinately high price. If districts set an average tuition/fee level it is assumed that their expenditures would change to the extent that their tuition/fee level was above or below the mean level. Column 5 in Table 11 displays for each district the

TABLE 11

COMMUNITY COLLEGE DISTRICT DISPARITIES FROM PROGRAM ADJUSTED EXPENDITURES, TUITION ADJUSTED EXPENDITURES, AND MEAN PROPERTY WEALTH IN ILLINOIS FOR 1975-76

District Number (1)	Actual Expenditures (2)	Program Adjusted Expenditures* (3)	Difference Between Actual Actual Adjusted Expenditures and Program Adjusted Expenditures (4)	Difference Between Tuition Adjusted Expenditures and Program Adjusted Expenditures** (5)	Difference Between Actual Equalized and Mean Equalized Property Wealth*** (6)
1	$1,583.56	$1,670.70	$ -87.14	$ +59.39	$ -37,518
2	1,577.80	1,535.10	+42.70	-64.77	+84,977
3	1,524.47	1,570.20	-45.73	-114.83	-100,235
4	1,600.77	1,592.10	+8.63	-94.24	-84,679
5	1,782.41	1,604.40	+178.01	+31.06	+61,439
6	1,444.51	1,613.40	-168.89	-262.40	-49,587
7	1,735.99	1,560.00	+175.99	+125.97	-86,060
8	913.57	1,505.70	-592.13	-343.35	-79,897
9	1,759.49	1,581.30	+178.19	+150.71	+29,210
10	1,395.81	1,566.60	-170.79	-385.18	-93,236
11	1,493.40	1,561.50	-68.10	-246.72	+95,621
12	1,613.21	1,566.30	+46.91	-115.23	-11,187
13	1,497.64	1,597.50	-99.86	+19.60	+71,886
14	1,594.60	1,570.20	+24.40	-46.98	+57,113
15	1,396.99	1,609.50	-212.51	-368.30	-46,424
16	1,551.92	1,572.00	-20.08	+7.50	+44,108
17	1,495.41	1,595.40	-99.99	-129.38	-9,584
18	1,468.34	1,606.50	-138.16	-97.94	+111,173
19	1,766.47	1,573.80	+192.67	+191.72	-22,078
20	1,535.64	1,578.00	-42.36	-72.62	-11,434
21	1,457.92	1,659.00	-201.08	-18.53	-126,575
22	1,343.23	1,566.90	-223.67	-222.76	-45,664
23	1,504.15	1,592.70	-88.55	-102.51	-68,374
24	1,447.35	1,531.20	-83.85	-84.38	-15,543
25	1,382.92	1,563.60	-180.68	-147.68	+36,380
26	1,883.31	1,559.70	+323.61	+294.75	+162,988
27	2,116.02	1,569.60	+546.42	+556.45	+75,269
28	1,765.83	1,569.30	+196.23	+16.58	+144,283
29	1,154.12	1,568.40	-414.28	-106.57	-207,376
30	1,449.59	1,559.70	-110.11	+51.73	-117,412
31	1,118.10	1,571.70	-435.60	-212.22	-224,101
32	1,433.30	1,575.30	-142.00	-145.31	-28,760
33	1,574.07	1,637.10	+63.03	+168.91	-105,570
34	2,475.06	1,614.30	+860.76	+953.62	+151,590
35	2,286.99	1,540.80	+746.19	+612.36	+125,899
36	1,525.93	1,562.70	-36.77	-24.36	-14,666
37	2,253.70	1,530.90	+722.80	+683.41	+334,613

*A district's program adjusted expenditure figure is calculated by multiplying the proportion of students in eight standard programs by the statewide average cost of those programs.

**A district's tuition adjusted expenditure figure is calculated by adding the difference between a statewide average tuition figure and a district's actual tuition figure to the district's actual expenditures.

***Mean equalized property wealth is calculated using community college districts as the units of analysis.

expenditure differences between what districts would have spent if their tuition/fee levels had been at the average level and their program adjusted expenditures per student. The relationship between these differences and districts' discrepancies from average property wealth per student is strong, with a correlation coefficient of .58, and can be summarized by the following linear regression equation:

tuition adjusted - program adjusted expenditures = 13.987 + 1.536 [(actual - mean property wealth per student) ÷ 1,000]

For every $1,000 of variation in district property wealth from mean statewide property wealth per student there is an expectation of $1.54 difference between the actual expenditure level, adjusted for the district's variance from the average statewide tuition level, and the program adjusted expenditure level. The fact that the inclusion of a tuition adjustment factor reduces the magnitude of the relationship between district expenditures and district wealth suggests that districts spending at a level below a level to provide average programs also tend to charge less than the average tuition/fee level while districts spending at a level above a level to provide average programs also tend to set tuition/fees at a level higher than the statewide average. Thus the relationship between expenditures and wealth for community college districts is complicated by relationships between tuition and expenditures as well as tuition and wealth.

Using a number of measures, then, it is clear that a relationship existed between wealth and revenues/expenditures as well as between wealth and other variables related to district behavior for community college districts in Illinois in 1975-76. This indicates that the state's system of supporting community colleges might be modified to promote inter-district equity within a framework of appropriate intergovernmental fiscal economics. What appears to be a relatively simple situation is complicated by the many forms through

which state aid is distributed as well as by factors that legitimately cause expenditure disparities among districts and the tuition problem. It should be noted that this analysis has not taken into consideration the relationship of community college finance to the financing of other educational institutions, the inter-student inequities that may exist, or the impact of taxation on citizens of different income groups.

Conclusion

This paper has examined some of the problems associated with state support for community colleges, particularly when local community college districts are responsible for providing a portion of total institutional revenue. A brief discussion of the economics of intergovernmental fiscal relations and a summary of the development of state patterns of support for community colleges has been presented. Essentially, three problems have been mentioned that relate to the equity and efficiency of how state aid is distributed in support of community colleges: the integration of direct state support for community colleges into the system of state support for other public educational facilities, including elementary/secondary and postsecondary institutions; the consideration of local district wealth in the distribution of state aid to community colleges; and tuition, including its relationship to the other problems and its impact on students. In discussing these problems, a number of technical considerations have been raised, such as how to measure district wealth or the designation of an appropriate task unit for funding purposes. Each of these problems and technical considerations needs to be investigated further, if a state support system is to be properly designed.

In the latter portion of the paper, an examination of data for the community college system in Illinois has been undertaken. The examination

concentrated on the second problem cited above, the inter-district equity situation. It is clear that there are a number of different approaches that can be taken in analyzing this problem. The relationship between district wealth and district expenditures that have been found to be in violation of state laws pertaining to elementary/secondary education has been found to exist for the community college system, although it is further complicated by the tuition problem. One of the questions that requires additional research is how districts would respond to changes in the state support system; would expenditures, tax rates, or tuition levels be modified and what effect might such modifications have on student behavior?

There are, of course, additional policy issues directly related to financing that have not been discussed in depth in this paper. One is the problem of integrating state aid to community colleges with federal support available both to institutions and, to a greater extent, to students. A second issue is whether local support of community colleges should supplement state support or be considered part of a total "public" support of community colleges. There is also the question of how to determine an appropriate level of the student contribution. Finally there are numerous issues related to taxation; the impact of taxes on state residents and the ability of the tax structure to support future expenditure levels. These issues will become more important in the future if the problems faced by the postsecondary education system and the constraints on local and state governments escalate.

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